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What is the accuracy of estimated blood loss made by the obstetricians at cesarean section based on drop of hemoglobin level: A retrospective cohort study

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Introduction: Hemorrhage is defined as 10% or greater decrease in hematocrit. It is considered as a major complication of surgeries and is one of the most common causes of death during surgical settings. Despite the low mortality and morbidity of Caesarean Sections (CS), hemorrhage is still considered as a threat to the patients and surgeons. Knowing the accurate blood loss is very helpful for resuscitation process and reducing in plenty of hemorrhagic shocks.

Objectives: (1) To define the estimation of blood loss made by the obstetricians, (2) to correlate the exact amount of blood loss measured by the difference of hemoglobin level based on Complete Blood Count (CBC) test done before and after the surgery and (3) to determine the accuracy of estimated blood loss made by the obstetricians during caesarean sections based on drop of hemoglobin level.

Methods: A retrospective cohort study was conducted in King Abdulaziz Medical City during January 2016 till December 2016. A sample of 536 patients was calculated to give us 80% power with α level of 5%. Simple descriptive statistics (mean, standard deviation, percentage) was applied on demographic data and the correlation between Actual Blood Loss (ABL) versus Estimated Blood Loss (EBL) was done. General linear model was done to find the risk factors for increased blood loss. A formula was used to calculate Actual Blood Volume (ABV) which is needed to calculate Actual Blood Loss (ABL). [Actual blood volume=weight*65]. Actual blood loss=Actual blood volume (pre hemoglobin-post hemoglobin/pre hemoglobin).

Results: The study found a significant (P value<0.0001511) for the correlation between estimated blood loss and actual blood loss. Underestimation was 29.37% and overestimation was 70.63%. Risk factors were mentioned and tested to find out their contributing in increasing actual blood loss, such as (diabetes mellitus, hypertension, anemia, etc.)

Conclusion: Our findings reveal no correlation between the obstetricians' assessment of estimation blood loss and the actual blood loss. To conclude, estimation blood loss shows no accuracy and we suggest replacing it with laboratory results (pre and post-hemoglobin) to get the accurate blood loss.

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